(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 7 April 2005 (07.04.2005)

PCT

(10) International Publication Number WO 2005/031977 A3

(51) International Patent Classification⁷:

H04B 7/00

(21) International Application Number:

PCT/GB2004/004045

(22) International Filing Date:

23 September 2004 (23.09.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0322538.0

26 September 2003 (26.09.2003)

- (71) Applicant (for all designated States except US): THE QUEEN'S UNIVERSITY OF BELFAST [GB/GB]; University Road, Belfast BT7 1NN (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): FUSCO, Vincent, Francis [GB/GB]; 46 Glebe Manor, Glengormley, Co Antrim BT36 6HF (GB). BRABETZ, Thorsten [DE/GB]; 12 Henly Gardens, Carrickfergus BT38 8UL (GB). BUCHANAN, Neil [GB/GB]; 4 Lenamore Park, Lisburn, Co Antrim BT28 3NJ (GB).
- MURGITROYD & COMPANY; Scotland House, 165-169 Scotland Street, Glasgow G5 8PL (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report:

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PHASE CONJUGATION CIRCUIT

(57) Abstract: A phase conjugate circuit is disclosed for deriving phase conjugation information from a main input signal of a given frequency. In one embodiment, the main input signal is mixed with the main output signal to provide the feedback signal and the reference signal is the PLL input signal. In an alternative embodiment, the reference signal is mixed with the main output signal to produce the feedback signal and the main input signal is the PLL input signal. In a further alternative embodiment, the main input signal is mixed Faith the reference signal to provide the PLL input signal and the main output signal is the feedback signal.